

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

- 1 **Claim 1.** (Currently amended) A method for modifying the glycosylation pattern of a
2 glycopeptide comprising an acceptor moiety for a first fucosyltransferase selected from FucT-IV,
3 FucT-V, FucT-VI, FucT-VII, and combinations thereof, wherein said first fucosyltransferase
4 lacks a membrane anchoring domain, said method comprising:
- 5 (a) contacting the glycopeptide with a reaction mixture that comprises a fucose
6 donor moiety and the first fucosyltransferase under appropriate conditions to
7 transfer fucose from the fucose donor moiety to the acceptor moiety, such that
8 the glycopeptide has a substantially uniform fucosylation pattern.
- 1 **Claim 2.** (Currently amended) The method according to claim 1, wherein the glycopeptide
2 comprises a second acceptor moiety for a second fucosyltransferase, and the method further
3 comprises .
- 4 (b) contacting the glycopeptide with a reaction mixture that comprises a fucose
5 donor moiety and the second fucosyltransferase under appropriate conditions
6 to transfer fucose from the fucose donor moiety to the acceptor moiety, such
7 that the glycopeptide has a substantially uniform fucosylation pattern.
- 1 **Claim 3.** (Original) The method according to claim 2, wherein the glycopeptide is
2 contacted with the first fucosyltransferase and the second fucosyltransferase simultaneously.
- 1 **Claims 4.** (Original) The method according to claim 2, wherein the glycopeptide is
2 contacted with the first fucosyltransferase and the second fucosyltransferase sequentially without
3 isolation of product resulting from contacting with the first fucosyltransferase.
- 1 **Claim 5.** (Cancelled)

1 **Claim 6.** (Currently amended) The method according to claim 2, wherein the second
2 fucosyltransferase is a member selected from FucT-IV, FucT-V, FucT-VI, FucT-VII and
3 combinations thereof.

1 **Claim 7.** (Original) The method of claim 1, wherein the fucosyltransferase is bacterial.

1 **Claim 8.** (Original) The method of claim 1, wherein the fucosyltransferase is
2 recombinantly produced.

1 **Claim 9.** (Cancelled)

1 **Claim 10.** (Original) The method of claim 1, wherein at least about 80% of the acceptor
2 moieties on the glycopeptide are fucosylated.

1 **Claim 11.** (Original) The method of claim 1, wherein glycopeptide is reversibly
2 immobilized on a solid support.

1 **Claim 12.** (Currently amended) The method of claim 11 [1], wherein the solid support is an
2 affinity chromatography medium.

1 **Claim 13.** (Original) The method of claim 1, wherein the glycopeptide is a full-length
2 glycopeptide.

1 **Claim 14.** (Original) The method of claim 1, wherein the glycopeptide is a fragment of a
2 full length glycopeptide comprising an active site of the full-length glycopeptide.

1 **Claim 15.** (Original) The method according claim 1, wherein the glycopeptide is an IgG
2 chimera.

1 **Claim 16.** (Original) The method of claim 1, wherein the glycopeptide is a hormone, a
2 growth factor, an enzyme, an enzyme inhibitor, a cytokine, a receptor, a ligand, or a
3 monoclonal antibody.

- 1 **Claim 17.** (Original) The method of claim 1, wherein the glycopeptide is on a cell.
- 1 **Claim 18.** (Original) The method of claim 1, wherein the acceptor moiety comprises Gal β 1-
2 OR, Gal β 1,3/4GlcNAc-OR, NeuAc α 2,3Gal β 1,3/4GlcNAc-OR, wherein R is an amino acid, a
3 saccharide, an oligosaccharide or an aglycon group having at least one carbon atom and is linked
4 to or is part of a glycopeptide.
- 1 **Claim 19.** (Original) The method of claim 1, wherein the fucose donor moiety is GDP-
2 fucose.
- 1 **Claim 20.** (Original) The method of claim 1, further comprising, prior to step (a), contacting
2 said glycopeptide with a glycosyltransferase other than a fucosyltransferase and a donor moiety
3 other than a fucose donor moiety, thereby glycosylating the glycopeptide with a glycosyl moiety
4 other than a fucose unit.
- 1 **Claim 21.** (Original) The method of claim 20, wherein the glycosyltransferase is a member
2 selected from the group consisting of galactosyltransferase, sialyltransferase and combinations
3 thereof.
- 1 **Claim 22.** (Withdrawn) A composition comprising a glycopeptide fucosylated according to
2 the method of claim 1.
- 1 **Claim 23.** (Withdrawn) The composition of claim 22, wherein at least 80% of the acceptor
2 moieties on the glycopeptide are fucosylated.
- 1 **Claim 24.** (Withdrawn) The composition of claim 22, wherein glycopeptide is attached to a
2 solid support.
- 1 **Claim 25.** (Withdrawn) The composition of claim 24, wherein the solid support is an
2 affinity chromatography medium.

1 **Claim 26.** (Withdrawn) The composition of claim 22, wherein the glycopeptide is a full-
2 length glycopeptide.

1 **Claim 27.** (Withdrawn) The composition of claim 22, wherein the glycopeptide comprises
2 $\text{Fuc}\alpha 1,2\text{Gal}\beta 1\text{-OR}$, $\text{Gal}\beta 1,3/4(\text{Fuc}\alpha 1,4/3)\text{GlcNAc-OR}$,
3 $\text{NeuAc}\alpha 2,3\text{Gal}\beta 1,3/4(\text{Fuc}\alpha 1,3/4)\text{GlcNAc-OR}$, $\text{Fuc}\alpha 1,2\text{Gal}\beta 1,3/4(\text{Fuc}\alpha 1,4/3)\text{GlcNAc}\beta\text{-OR}$
4 wherein R is an amino acid, a saccharide, an oligosaccharide or an aglycon group having at least
5 one carbon atom and is linked to or is part of a glycopeptide.

1 **Claim 28.** (Withdrawn) The composition of claim 22, wherein the glycopeptide comprises
2 $\text{NeuAc}\alpha 2,3\text{Gal}\beta 1,3/4(\text{Fuc}\alpha 1,3/4)\text{GlcNAc-OR}$, wherein R is an amino acid, a saccharide, an
3 oligosaccharide or an aglycon group having at least one carbon atom and is linked to or is part of
4 a glycopeptide.

1 **Claim 29.** (Withdrawn) The composition of claim 22, wherein the glycopeptide is a
2 hormone, a growth factor, an enzyme, an enzyme inhibitor, a cytokine, a receptor, a ligand, or a
3 monoclonal antibody.

1 **Claim 30.** (Withdrawn) The composition of claim 22, wherein the glycopeptide is on a cell.

1 **Claim 31.** (Currently amended) A method of producing a recombinant glycopeptide having a
2 fucosylation pattern that is substantially identical to a fucosylated glycopeptide having a known
3 fucosylation pattern, said method comprising:

4 (a) contacting the recombinant glycopeptide with a reaction mixture that
5 comprises a fucose donor moiety and the fucosyltransferase is selected from
6 FucT-IV, FucT-V, FucT-VI, FucT-VII, and combinations thereof, under
7 appropriate conditions to transfer fucose from the fucose donor moiety to a
8 fucose acceptor moiety on said recombinant glycopeptide, thereby producing
9 a fucosylated recombinant glycopeptide, wherein said fucosyltransferase lacks
10 a membrane anchoring domain; and

11 (b) terminating the transfer of the fucose to the fucose acceptor when the
12 fucosylation pattern substantially identical to the known fucosylation pattern
13 is obtained.

1 **Claim 32.** (Original) The method according to claim 31, further comprising:
2 (c) assaying the fucosylation pattern of the fucosylated recombinant glycopeptide,
3 thereby determining whether the fucosylation pattern is substantially identical
4 to the known fucosylation pattern.

1 **Claim 33.** (Original) The method according to claim 31, wherein the terminating is due to
2 exhausting in the reaction mixture a member selected from the group consisting of the
3 fucosyltransferase, the fucose donor moiety, the fucose acceptor quench with a chelator and
4 combinations thereof.

1 **Claim 34.** (Original) The method according to claim 31, wherein the glycopeptide
2 comprises a second acceptor moiety for a second fucosyltransferase, and the method further
3 comprises contacting the glycopeptide with a reaction mixture that comprises a fucose donor
4 moiety and the second fucosyltransferase under appropriate conditions to transfer fucose from
5 the fucose donor moiety to the second acceptor moiety.

1 **Claim 35.** (Original) The method according to claim 34, wherein the glycopeptide is
2 contacted with the first fucosyltransferase and the second fucosyltransferase simultaneously.

1 **Claim 36.** (Original) The method according to claim 34, wherein the glycopeptide is
2 contacted with the first fucosyltransferase and the second fucosyltransferase sequentially without
3 isolation of product resulting from contacting with the first fucosyltransferase.

1 **Claim 37.** (Cancelled)

1 **Claim 38.** (Currently amended) The method according to claim 34, wherein the second
2 fucosyltransferase is a member selected from FucT-IV, FucT-V, FucT-VI, FucT-VII and
3 combinations thereof.

- 1 **Claim 39.** (Original) The method of claim 31, wherein the fucosyltransferase is bacterial.
- 1 **Claim 40.** (Original) The method of claim 31, wherein the fucosyltransferase is
2 recombinantly produced.
- 1 **Claim 41.** (Cancelled)
- 1 **Claim 42.** (Original) The method of claim 31, wherein at least about 80% of the acceptor
2 moieties on the glycopeptide are fucosylated.
- 1 **Claim 43.** (Original) The method of claim 31, wherein glycopeptide is reversibly
2 immobilized on a solid support.
- 1 **Claim 44.** (Original) The method of claim 31, wherein the solid support is an affinity
2 chromatography medium.
- 1 **Claim 45.** (Original) The method of claim 31, wherein the glycopeptide is a full-length
2 glycopeptide.
- 1 **Claim 46.** (Original) The method of claim 31, wherein the glycopeptide is a fragment of a
2 full length glycopeptide comprising an active site of the full-length glycopeptide.
- 1 **Claim 47.** (Original) The method according claim 31, wherein the glycopeptide is an IgG
2 chimera.
- 1 **Claim 48.** (Original) The method of claim 31, wherein the glycopeptide is a hormone, a
2 growth factor, an enzyme, an enzyme inhibitor, a cytokine, a receptor, a ligand, or a monoclonal
3 antibody.
- 1 **Claim 49.** (Original) The method of claim 31 wherein the glycopeptide is on a cell.
- 1 **Claim 50.** (Original) The method of claim 31, wherein the acceptor moiety comprises
2 Gal β 1-OR, Gal β 1,3/4GlcNAc-OR, NeuAc α 2,3Gal β 1,3/4GlcNAc-OR, wherein R is an amino

acid, a saccharide, an oligosaccharide or an aglycon group having at least one carbon atom and is linked to or is part of a glycopeptide.

Claim 51. (Original) The method of claim 31, wherein the fucose donor moiety is GDP-fucose.

Claim 52. (Original) The method of claim 31, further comprising, prior to step (a), contacting said glycopeptide with a glycosyltransferase other than a fucosyltransferase and a donor moiety other than a fucose donor moiety, thereby glycosylating the glycopeptide with a glycosyl moiety other than a fucose unit.

Claim 53. (Original) The method of claim 52, wherein the glycosyltransferase is a member selected from the group consisting of galactosyltransferase, sialyltransferase and combinations thereof.

Claim 54. (Original) A large-scale method for modifying the glycosylation pattern of a glycopeptide comprising an acceptor moiety for a first fucosyltransferase, said method comprising:

contacting at least about 500 mg of glycopeptide with a reaction mixture that comprises a fucose donor moiety and the first fucosyltransferase under appropriate conditions to transfer fucose from the fucose donor moiety to the acceptor moiety, such that the glycopeptide has a substantially uniform fucosylation pattern.

Claim 55. (Original) A large-scale method of producing a recombinant glycopeptide having a fucosylation pattern that is substantially identical to a fucosylated glycopeptide having a known fucosylation pattern, said method comprising:

(a) contacting at least about 500 mg of the recombinant glycopeptide with a reaction mixture that comprises a fucose donor moiety and the fucosyltransferase under appropriate conditions to transfer fucose from the

7 fucose donor moiety to a fucose acceptor moiety on said recombinant
8 glycopeptide, thereby producing a fucosylated recombinant glycopeptide; and

9 (b) terminating the transfer of the fucose to the fucose acceptor when the
10 fucosylation pattern substantially identical to the known fucosylation pattern
11 is obtained.

1 **Claim 56.** (Cancelled)

1 **Claim 57.** (Cancelled)

1 **Claim 58.** (Cancelled)

1 **Claim 59.** (Cancelled)

1 **Claim 60.** (Cancelled)

1 **Claim 61.** (Cancelled)

1 **Claim 62.** (Cancelled)

1 **Claim 63.** (Cancelled)

1 **Claim 64.** (Cancelled)

1 **Claim 65.** (Previously presented) A method for modifying the glycosylation pattern of a
2 glycopeptide comprising an acceptor moiety for a first fucosyltransferase, said method
3 comprising:

4 (a) contacting said glycopeptide with a glycosyltransferase other than a fucosyltransferase
5 and a donor moiety other than a fucose donor moiety, thereby glycosylating the
6 glycopeptide with a glycosyl moiety other than a fucose unit, wherein the
7 glycosyltransferase is a member selected from the group consisting of
8 galactosyltransferase, sialyltransferase and combinations thereof, and

(b) contacting the glycopeptide with a reaction mixture that comprises a fucose donor moiety and the first fucosyltransferase under appropriate conditions to transfer fucose from the fucose donor moiety to the acceptor moiety, such that the glycopeptide has a substantially uniform fucosylation pattern.

Claim 66. (New) A method for modifying the glycosylation pattern of a glycopeptide comprising an acceptor moiety for a first fucosyltransferase, wherein said first fucosyltransferase lacks a membrane anchoring domain, said method comprising:

(a) contacting the glycopeptide with a reaction mixture that comprises a fucose donor moiety and the first fucosyltransferase under appropriate conditions to transfer fucose from the fucose donor moiety to the acceptor moiety, such that the glycopeptide has a substantially uniform fucosylation pattern;

wherein the glycopeptide comprises a second acceptor moiety for a second fucosyltransferase, and

(b) contacting the glycopeptide with a reaction mixture that comprises a fucose donor moiety and the second fucosyltransferase under appropriate conditions to transfer fucose from the fucose donor moiety to the acceptor moiety, such that the glycopeptide has a substantially uniform fucosylation pattern.

Claim 67. (New) A method for modifying the glycosylation pattern of a glycopeptide comprising an acceptor moiety for a first fucosyltransferase, wherein said first fucosyltransferase lacks a membrane anchoring domain, said method comprising:

(a) contacting the glycopeptide with a reaction mixture that comprises a fucose donor moiety and the first fucosyltransferase under appropriate conditions to transfer fucose from the fucose donor moiety to the acceptor moiety, such that the glycopeptide has a substantially uniform fucosylation pattern;

wherein the glycopeptide comprises a second acceptor moiety for a second fucosyltransferase; and

10 (b) contacting the glycopeptide with a reaction mixture that comprises a fucose donor
11 moiety and the second fucosyltransferase under appropriate conditions to transfer
12 fucose from the fucose donor moiety to the acceptor moiety, such that the
13 glycopeptide has a substantially uniform fucosylation pattern;
14 wherein the glycopeptide is contacted with the first fucosyltransferase and the second
15 fucosyltransferase simultaneously.

1 **Claim 68.** (New) A method for modifying the glycosylation pattern of a glycopeptide
2 comprising an acceptor moiety for a first fucosyltransferase, wherein said first fucosyltransferase
3 lacks a membrane anchoring domain, said method comprising:

4 (a) contacting the glycopeptide with a reaction mixture that comprises a fucose donor
5 moiety and the first fucosyltransferase under appropriate conditions to transfer
6 fucose from the fucose donor moiety to the acceptor moiety, such that the
7 glycopeptide has a substantially uniform fucosylation pattern;
8 wherein the glycopeptide comprises a second acceptor moiety for a second
9 fucosyltransferase, and

10 (b) contacting the glycopeptide with a reaction mixture that comprises a fucose donor
11 moiety and the second fucosyltransferase under appropriate conditions to transfer
12 fucose from the fucose donor moiety to the acceptor moiety, such that the
13 glycopeptide has a substantially uniform fucosylation pattern; and
14 wherein the second fucosyltransferase is a member selected from FucT-IV, FucT-V,
15 FucT-VI, FucT-VII and combinations thereof.

1 **Claim 69.** (New) A method for modifying the glycosylation pattern of a glycopeptide
2 comprising an acceptor moiety for a first fucosyltransferase, wherein said first fucosyltransferase
3 lacks a membrane anchoring domain, said method comprising:

4 (a) contacting the glycopeptide with a reaction mixture that comprises a fucose donor
5 moiety and the first fucosyltransferase under appropriate conditions to transfer

6 fucose from the fucose donor moiety to the acceptor moiety, such that the
7 glycopeptide has a substantially uniform fucosylation pattern;
8 and wherein the fucosyltransferase is bacterial.

1 **Claim 70.** (New) A method for modifying the glycosylation pattern of a glycopeptide
2 comprising an acceptor moiety for a first fucosyltransferase, wherein said first fucosyltransferase
3 lacks a membrane anchoring domain, said method comprising:

4 (a) contacting the glycopeptide with a reaction mixture that comprises a fucose donor
5 moiety and the first fucosyltransferase under appropriate conditions to transfer
6 fucose from the fucose donor moiety to the acceptor moiety, such that the
7 glycopeptide has a substantially uniform fucosylation pattern;
8 wherein the glycopeptide is a fragment of a full length glycopeptide comprising an active
9 site of the full-length glycopeptide.

1 **Claim 71.** (New) A method for modifying the glycosylation pattern of a glycopeptide
2 comprising an acceptor moiety for a first fucosyltransferase, wherein said first fucosyltransferase
3 lacks a membrane anchoring domain, said method comprising:

4 (a) contacting the glycopeptide with a reaction mixture that comprises a fucose donor
5 moiety and the first fucosyltransferase under appropriate conditions to transfer
6 fucose from the fucose donor moiety to the acceptor moiety, such that the
7 glycopeptide has a substantially uniform fucosylation pattern;
8 wherein the glycopeptide is an IgG chimera.

1 **Claim 72.** (New) A method for modifying the glycosylation pattern of a glycopeptide
2 comprising an acceptor moiety for a first fucosyltransferase, wherein said first fucosyltransferase
3 lacks a membrane anchoring domain, said method comprising:

4 (a) contacting the glycopeptide with a reaction mixture that comprises a fucose donor
5 moiety and the first fucosyltransferase under appropriate conditions to transfer

6 fucose from the fucose donor moiety to the acceptor moiety, such that the
7 glycopeptide has a substantially uniform fucosylation pattern;
8 wherein the glycopeptide is a hormone, a growth factor, an enzyme, an enzyme inhibitor,
9 a cytokine, and a receptor.

1 **Claim 73.** (New) A method for modifying the glycosylation pattern of a glycopeptide
2 comprising an acceptor moiety for a first fucosyltransferase, wherein said first fucosyltransferase
3 lacks a membrane anchoring domain, said method comprising:

4 (a) contacting the glycopeptide with a reaction mixture that comprises a fucose donor
5 moiety and the first fucosyltransferase under appropriate conditions to transfer
6 fucose from the fucose donor moiety to the acceptor moiety, such that the
7 glycopeptide has a substantially uniform fucosylation pattern;
8 wherein the glycopeptide is on a cell.

1 **Claim 74.** (New) A method for modifying the glycosylation pattern of a glycopeptide
2 comprising an acceptor moiety for a first fucosyltransferase, wherein said first fucosyltransferase
3 lacks a membrane anchoring domain, said method comprising:

4 contacting said glycopeptide with a glycosyltransferase selected from the group
5 consisting of galactosyltransferase, sialyltransferase and combinations thereof,
6 and a donor moiety other than a fucose donor moiety, thereby glycosylating the
7 glycopeptide with a glycosyl moiety other than a fucose unit; and

8 (a) contacting the glycopeptide with a reaction mixture that comprises a fucose donor
9 moiety and the first fucosyltransferase under appropriate conditions to transfer
10 fucose from the fucose donor moiety to the acceptor moiety, such that the
11 glycopeptide has a substantially uniform fucosylation pattern.

1 **Claim 75.** (New) A method of producing a recombinant glycopeptide having a fucosylation
2 pattern that is substantially identical to a fucosylated glycopeptide having a known fucosylation
3 pattern, said method comprising:

- 4 (a) contacting the recombinant glycopeptide with a reaction mixture that comprises a
5 fucose donor moiety and the fucosyltransferase is selected from FucT-IV, FucT-
6 V, FucT-VI, FucT-VII, and combinations thereof, under appropriate conditions to
7 transfer fucose from the fucose donor moiety to a fucose acceptor moiety on said
8 recombinant glycopeptide, thereby producing a fucosylated recombinant
9 glycopeptide, wherein said fucosyltransferase lacks a membrane anchoring
10 domain; and
11 wherein the glycopeptide comprises a second acceptor moiety for a second
12 fucosyltransferase;
13 (b) contacting the glycopeptide with a reaction mixture that comprises a fucose donor
14 moiety and the second fucosyltransferase under appropriate conditions to transfer
15 fucose from the fucose donor moiety to the second acceptor moiety; and
16 (c) terminating the transfer of the fucose to the fucose acceptor when the fucosylation
17 pattern substantially identical to the known fucosylation pattern is obtained.

1 **Claim 76.** (New) A method of producing a recombinant glycopeptide having a fucosylation
2 pattern that is substantially identical to a fucosylated glycopeptide having a known fucosylation
3 pattern, said method comprising:

- 4 (a) contacting the recombinant glycopeptide with a reaction mixture that comprises a
5 fucose donor moiety and the fucosyltransferase is selected from FucT-IV, FucT-
6 V, FucT-VI, FucT-VII, and combinations thereof, under appropriate conditions to
7 transfer fucose from the fucose donor moiety to a fucose acceptor moiety on said
8 recombinant glycopeptide, thereby producing a fucosylated recombinant
9 glycopeptide, wherein said fucosyltransferase lacks a membrane anchoring
10 domain; and
11 wherein the glycopeptide comprises a second acceptor moiety for a second
12 fucosyltransferase;
13 (b) contacting the glycopeptide with a reaction mixture that comprises a fucose donor
14 moiety and the second fucosyltransferase under appropriate conditions to transfer

15 fucose from the fucose donor moiety to the acceptor moiety, such that the
16 glycopeptide has a substantially uniform fucosylation pattern;
17 wherein the glycopeptide is contacted with the first fucosyltransferase and the second
18 fucosyltransferase simultaneously; and
19 (c) terminating the transfer of the fucose to the fucose acceptor when the fucosylation
20 pattern substantially identical to the known fucosylation pattern is obtained.

1 **Claim 77.** (New) A method of producing a recombinant glycopeptide having a fucosylation
2 pattern that is substantially identical to a fucosylated glycopeptide having a known fucosylation
3 pattern, said method comprising:

4 (a) contacting the recombinant glycopeptide with a reaction mixture that comprises a
5 fucose donor moiety and the fucosyltransferase is selected from FucT-IV, FucT-
6 V, FucT-VI, FucT-VII, and combinations thereof, under appropriate conditions to
7 transfer fucose from the fucose donor moiety to a fucose acceptor moiety on said
8 recombinant glycopeptide, thereby producing a fucosylated recombinant
9 glycopeptide, wherein said fucosyltransferase lacks a membrane anchoring
10 domain; and

11 wherein the glycopeptide comprises a second acceptor moiety for a second
12 fucosyltransferase;

13 (b) contacting the glycopeptide with a reaction mixture that comprises a fucose donor
14 moiety and the second fucosyltransferase under appropriate conditions to transfer
15 fucose from the fucose donor moiety to the acceptor moiety, such that the
16 glycopeptide has a substantially uniform fucosylation pattern; and
17 wherein the second fucosyltransferase is a member selected from FucT-IV, FucT-V,
18 FucT-VI, FucT-VII, and combinations thereof; and

19 (c) terminating the transfer of the fucose to the fucose acceptor when the fucosylation
20 pattern substantially identical to the known fucosylation pattern is obtained.

1 **Claim 78.** (New) A method of producing a recombinant glycopeptide having a fucosylation
2 pattern that is substantially identical to a fucosylated glycopeptide having a known fucosylation
3 pattern, said method comprising:

4 (a) contacting the recombinant glycopeptide with a reaction mixture that comprises a
5 fucose donor moiety and the fucosyltransferase is selected from FucT-IV, FucT-
6 V, FucT-VI, FucT-VII, and combinations thereof, under appropriate conditions to
7 transfer fucose from the fucose donor moiety to a fucose acceptor moiety on said
8 recombinant glycopeptide, thereby producing a fucosylated recombinant
9 glycopeptide, wherein said fucosyltransferase lacks a membrane anchoring
10 domain; and

11 wherein the fucosyltransferase is bacterial; and

12 (b) terminating the transfer of the fucose to the fucose acceptor when the fucosylation
13 pattern substantially identical to the known fucosylation pattern is obtained.

1 **Claim 79.** (New) A method of producing a recombinant glycopeptide having a fucosylation
2 pattern that is substantially identical to a fucosylated glycopeptide having a known fucosylation
3 pattern, said method comprising:

4 (a) contacting the recombinant glycopeptide with a reaction mixture that comprises a
5 fucose donor moiety and the fucosyltransferase is selected from FucT-IV, FucT-
6 V, FucT-VI, FucT-VII, and combinations thereof, under appropriate conditions to
7 transfer fucose from the fucose donor moiety to a fucose acceptor moiety on said
8 recombinant glycopeptide, thereby producing a fucosylated recombinant
9 glycopeptide, wherein said fucosyltransferase lacks a membrane anchoring
10 domain; and

11 wherein the glycopeptide is a fragment of a full length glycopeptide comprising an active
12 site of the full-length glycopeptide; and

13 (b) terminating the transfer of the fucose to the fucose acceptor when the fucosylation
14 pattern substantially identical to the known fucosylation pattern is obtained.

1 **Claim 80.** (New) A method of producing a recombinant glycopeptide having a fucosylation
2 pattern that is substantially identical to a fucosylated glycopeptide having a known fucosylation
3 pattern, said method comprising:

4 (a) contacting the recombinant glycopeptide with a reaction mixture that comprises a
5 fucose donor moiety and the fucosyltransferase is selected from FucT-IV, FucT-
6 V, FucT-VI, FucT-VII, and combinations thereof, under appropriate conditions to
7 transfer fucose from the fucose donor moiety to a fucose acceptor moiety on said
8 recombinant glycopeptide, thereby producing a fucosylated recombinant
9 glycopeptide, wherein said fucosyltransferase lacks a membrane anchoring
10 domain; and

11 wherein the glycopeptide is an IgG chimera; and

12 (b) terminating the transfer of the fucose to the fucose acceptor when the fucosylation
13 pattern substantially identical to the known fucosylation pattern is obtained.

1 **Claim 81.** (New) A method of producing a recombinant glycopeptide having a fucosylation
2 pattern that is substantially identical to a fucosylated glycopeptide having a known fucosylation
3 pattern, said method comprising:

4 (a) contacting the recombinant glycopeptide with a reaction mixture that comprises a
5 fucose donor moiety and the fucosyltransferase is selected from FucT-IV, FucT-
6 V, FucT-VI, FucT-VII, and combinations thereof, under appropriate conditions to
7 transfer fucose from the fucose donor moiety to a fucose acceptor moiety on said
8 recombinant glycopeptide, thereby producing a fucosylated recombinant
9 glycopeptide, wherein said fucosyltransferase lacks a membrane anchoring
10 domain; and

11 wherein the glycopeptide is a hormone, a growth factor, an enzyme, an enzyme inhibitor,
12 a cytokine, and a receptor; and

13 (b) terminating the transfer of the fucose to the fucose acceptor when the fucosylation
14 pattern substantially identical to the known fucosylation pattern is obtained.

1 **Claim 82.** (New) A method of producing a recombinant glycopeptide having a fucosylation
2 pattern that is substantially identical to a fucosylated glycopeptide having a known fucosylation
3 pattern, said method comprising:

4 (a) contacting said glycopeptide with a glycosyltransferase other than a fucosyltransferase
5 and a donor moiety other than a fucose donor moiety, thereby glycosylating the
6 glycopeptide with a glycosyl moiety other than a fucose unit, wherein the
7 glycosyltransferase is a member selected from the group consisting of
8 galactosyltransferase, sialyltransferase and combinations thereof

9 (b) contacting the recombinant glycopeptide with a reaction mixture that comprises a
10 fucose donor moiety and the fucosyltransferase is selected from FucT-IV, FucT-
11 V, FucT-VI, FucT-VII, and combinations thereof, under appropriate conditions to
12 transfer fucose from the fucose donor moiety to a fucose acceptor moiety on said
13 recombinant glycopeptide, thereby producing a fucosylated recombinant
14 glycopeptide, wherein said fucosyltransferase lacks a membrane anchoring
15 domain; and

16 (c) terminating the transfer of the fucose to the fucose acceptor when the fucosylation
17 pattern substantially identical to the known fucosylation pattern is obtained.